

CLAIMS

1. A plasma display unit at least containing a front panel and a rear panel in a confronting arrangement via discharge space, the front panel having a plurality of display electrode pairs disposed on a glass substrate, and the rear
 5 panel having a plurality of address electrodes that forms discharge cells in combination with the display electrode pairs, and a phosphor layer for emitting by discharging, wherein in the case that a surface of the phosphor layer bears positive (+) charge when the phosphor layer is formed of main material alone,
 an oxide containing an element with electronegativity larger than an oxide
 10 included in the main material is added or used as a coating material in order to suppress an amount of charge of the phosphor layer within $\pm 0.01 \mu\text{C/g}$.

2. The plasma display unit of Claim 1, wherein the main material is formed of an aluminate-based green phosphor of $\text{BaAl}_{12}\text{O}_{19}:\text{Mn}^{2+}$.
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3. The plasma display unit of Claim 1, wherein the main material is formed of a yttrium oxide-based green phosphor of $(\text{Y}, \text{Gd})\text{BO}_3:\text{Tb}^{3+}$.

4. The plasma display unit of Claim 1, wherein the main material is
 20 formed of an aluminate-based blue phosphor of $\text{Ba}_{1-x}\text{MgAl}_{10}\text{O}_{17}:\text{Eu}_x^{2+}$ or $\text{Ba}_{1-x-y}\text{Sr}_y\text{MgAl}_{10}\text{O}_{17}:\text{Eu}_x^{2+}$.

5. The plasma display unit of Claim 1, wherein the main material is formed of a yttrium oxide-based red phosphor of $(\text{Y}, \text{Gd})\text{BO}_3:\text{Eu}^{3+}$ or $\text{Y}_2\text{O}_3:\text{Eu}^{3+}$.
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6. The plasma display unit of Claim 1 through Claim 5, wherein the oxide is at least any one of titanium oxide (TiO_2); tin oxide (SnO_2); germanium oxide

(GeO₂); tantalum oxide (Ta₂O₅); niobium oxide (Nb₂O₅); vanadium oxide (V₂O₅); molybdenum oxide (MoO₃); boron oxide (B₂O₃); silicon oxide (SiO₂); and antimony oxide (Sb₂O₃).

5 7. A plasma display unit at least containing a front panel and a rear panel in a confronting arrangement via discharge space, the front panel having a plurality of display electrode pairs disposed on a glass substrate, and the rear panel having a plurality of address electrodes that forms discharge cells in combination with the display electrode pairs, and a phosphor layer for emitting
10 by discharging, wherein in the case that a surface of the phosphor layer bears negative (-) charge when the phosphor layer is formed of main material alone, an oxide containing an element with electronegativity smaller than an oxide included in the main material is added or used as a coating material in order to suppress an amount of charge of the phosphor layer within $\pm 0.01 \mu\text{C/g}$.

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8. The plasma display unit of Claim 7, wherein the main material is formed of a silicate-based green phosphor of $\text{Zn}_2\text{SiO}_4\text{:Mn}^{2+}$.

9. The plasma display unit of Claim 7 or Claim 8, wherein the oxide is at
20 least any one of zinc oxide (ZnO); yttrium oxide (Y₂O₃); aluminum oxide (Al₂O₃); bismuth oxide (Bi₂O₃); magnesium oxide (MgO).

10. A phosphor having an amount of charge suppressed within $\pm 0.01 \mu\text{C/g}$ obtained by adding an oxide as a sub material containing an element with
25 electronegativity larger than an oxide of main material into the main material, or by applying the oxide as a coating material on a surface of a phosphor layer, in the case that the surface of the phosphor layer bears positive (+) charge when

the phosphor layer is formed of main material alone.

11. The phosphor of Claim 10, wherein the main material is formed of an aluminate-based green phosphor of $\text{BaAl}_{12}\text{O}_{19}:\text{Mn}^{2+}$.

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12. The phosphor of Claim 10, wherein the main material is formed of a yttrium oxide-based green phosphor of $(\text{Y}, \text{Gd})\text{BO}_3:\text{Tb}^{3+}$.

13. The phosphor of Claim 10, wherein the main material is formed of an aluminate-based blue phosphor of $\text{Ba}_{1-x}\text{MgAl}_{10}\text{O}_{17}:\text{Eu}_x^{2+}$ or $\text{Ba}_{1-x-y}\text{Sr}_y\text{MgAl}_{10}\text{O}_{17}:\text{Eu}_x^{2+}$.

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14. The phosphor of Claim 10, wherein the main material is formed of a yttrium oxide-based red phosphor of $(\text{Y}, \text{Gd})\text{BO}_3:\text{Eu}^{3+}$ or $\text{Y}_2\text{O}_3:\text{Eu}^{3+}$.

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15. The phosphor of Claim 10 through Claim 15, wherein the oxide is at least any one of titanium oxide (TiO_2); tin oxide (SnO_2); germanium oxide (GeO_2); tantalum oxide (Ta_2O_5); niobium oxide (Nb_2O_5); vanadium oxide (V_2O_5); molybdenum oxide (MoO_3); boron oxide (B_2O_3); silicon oxide (SiO_2); and antimony oxide (Sb_2O_3).

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16. A phosphor having an amount of charge suppressed within $\pm 0.01 \mu\text{C/g}$ obtained by adding an oxide as a sub material containing an element with electronegativity smaller than an oxide of main material into the main material, or by applying the oxide as a coating material on a surface of a phosphor layer, in the case that the surface of the phosphor layer bears negative (-) charge when the phosphor layer is formed of main material alone.

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17. The phosphor of Claim 16, wherein the main material is formed of a silicate-based green phosphor of $\text{Zn}_2\text{SiO}_4\text{:Mn}^{2+}$.

5 18. The phosphor of Claim 16 or Claim 17, wherein the oxide is at least any one of zinc oxide (ZnO); yttrium oxide (Y_2O_3); aluminum oxide (Al_2O_3); bismuth oxide (Bi_2O_3); magnesium oxide (MgO).